

Environmental Performance Partnership Agreement: 2002-2003

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Massachusetts Department of Environmental Protection

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New England



XIV. Clean Up Waste Sites

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- Effectively manage response to time-critical conditions
- Ensure that risk reduction measures are properly implemented

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- Increase awareness of brownfields site issues through strong interagency partnerships
- Provide clear rules, guidance, and education to assist private parties conducting response actions, and
- Implement program improvements and operational changes.

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- Integrate state and federal cleanup programs to maximize flexibility and accommodate state program priorities
- Provide clear rules, guidance, and education to assist private parties conducting response actions, and
- Implement program improvements and operational changes.

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- Use compliance and enforcement to encourage private parties to take response actions and to ensure the quality of private response actions
- Integrate state and federal cleanup programs to maximize flexibility and accommodate state program priorities
- Provide clear rules, guidance, and education to assist private parties conducting response actions, and
- Implement program improvements and operational changes.

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Clean Up Waste Sites

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Clean Up Waste Sites Goal #6: Ensure the sound closure and cleanup of contaminated sites at licensed and interim-status hazardous waste treatment, storage, and disposal facilities

A. Self Assessment

1. Introduction

How does DEP deal with the cleanup of waste sites and the closure of unlined landfills?

The goal of DEP's cleanup efforts is to protect health, safety, public welfare, and the environment from the dangers posed by uncontrolled sources of contamination. Three DEP programs deal with cleanup:

- the Waste Site Cleanup Program (authorized by Massachusetts General Law Chapter 21E) addresses most releases of oil and hazardous materials and is the primary vehicle for achieving the Commonwealth's cleanup goals
- the Solid Waste Management Program (authorized by M.G.L. Chapters 21H and 111, §150A) addresses the assessment and closure of unlined landfills, and
- the Hazardous Waste Management Program (authorized by M.G.L. Chapter 21C) addresses contamination at licensed and interim-status hazardous waste facilities. These cleanups are implemented under facility licenses, closure and post-closure plans, and administrative orders under Chapter 21C and the implementing regulations 310 CMR 30.000.

Regardless of the oversight authority, DEP requires all sites to be cleaned up to an equivalent standard with appropriate opportunities for public involvement.

2. The Waste Site Cleanup Program

What are DEP's responsibilities under the State Superfund Law?

DEP is required by the state Superfund Law (M.G.L. Chapter 21E, enacted in 1983) to ensure timely responses to releases of oil and hazardous materials to the environment. In a typical year, DEP responds to more than 2,000 oil and hazardous material spills, fires, and other environmental emergencies. The agency also deals with (either directly or indirectly) sites where historical contamination from past uses has been discovered. If left uncontrolled, these sites can endanger drinking water, ecosystems, and public safety. Economic development suffers, too, because uncertainties about cleanup costs and liability can leave businesses reluctant to redevelop contaminated properties, especially in our cities. Instead, businesses often choose to build facilities in “green” suburban and rural areas, encouraging sprawl and leaving prime urban property underused or abandoned, and moving jobs out of our cities.

Why and how was the Waste Site Cleanup Program redesigned?

In 1993, DEP redesigned the Waste Site Cleanup Program to encourage faster assessment and cleanup of contaminated sites without compromising environmental standards. Amendments to Chapter 21E enacted in 1992 gave property owners and other potentially responsible parties (PRPs) both more responsibility for cleanups and greater flexibility to get them done. This initiative was designed to allow DEP staff to focus on higher priority sites and associated activities such as site discovery, at the same time allowing the private sector to move forward with cleanup of lower priority sites. The rules for reporting, assessing, and cleaning up releases of oil and hazardous materials were codified in a totally revamped Massachusetts Contingency Plan (MCP), which took effect on October 1, 1993.

Under the new rules, parties conducting response actions hire private environmental professionals licensed by an independent state board to evaluate site conditions and oversee response actions. These Licensed Site Professionals (LSPs) manage site work and provide opinions that it meets state requirements — in most cases without the need for DEP's direct involvement. The agency then audits the results at a portion of all sites each year to ensure adherence to state cleanup standards and conducts other activities to ensure compliance.

Sites not permanently cleaned up within one year of notification to DEP are scored using the MCP's Numerical Ranking System and classified to determine the subsequent level of DEP oversight. Cleanups of sites classified as Tier II may proceed without direct DEP involvement. Tier I site cleanups require a DEP permit and the most complicated of these (Tier IA) are overseen directly by the agency. Permanent solutions that eliminate all significant risks must be achieved at all sites, regardless of classification. Sites where property owners or other parties fail to classify their sites by the one year deadline are classified as “default Tier IB” and risk DEP enforcement actions if they continue to fail to meet their assessment and cleanup obligations.

3. Status

What is the status of the Waste Site Cleanup Program?

Since the new Waste Site Cleanup Program started operation in 1993, there has been a significant increase in the overall amount of cleanup and number of sites reaching closure.

Approximately 17,500 releases exceeding notification thresholds have been reported to DEP since 1993, (data is for the time period October 1, 1993 through June 30, 2001).

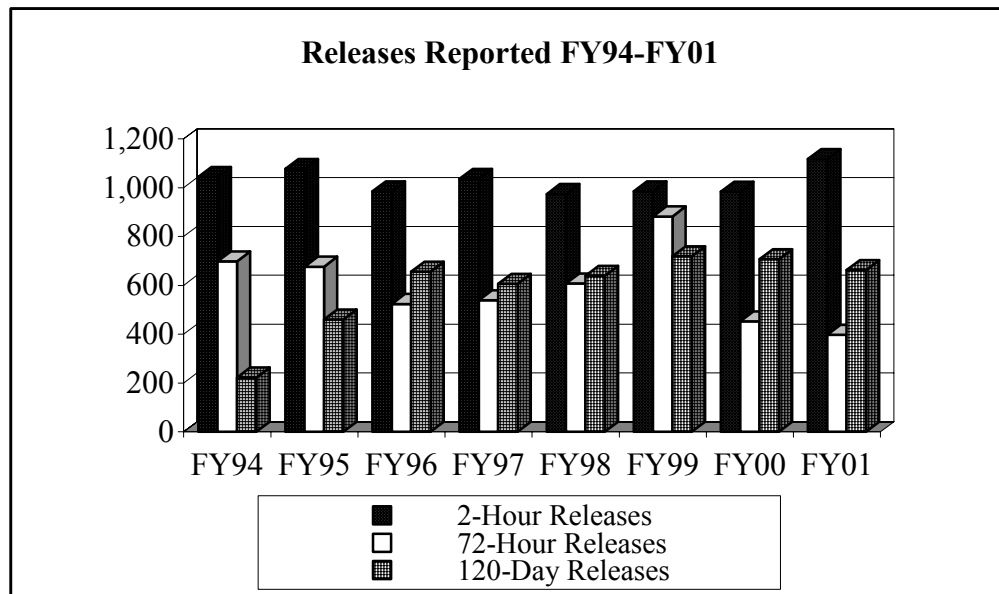


Figure 33

- Time critical releases must be reported within 2 hours or 72 hours, and
- Historical contamination of soil and ground water must be reported to DEP within 120 days.

How many Risk Reduction Measures have been implemented?

Since 1993 more than 17,400 risk reduction measures have been implemented (approximately 12,800 mandatory Immediate Response Actions and 4,600 voluntary Release Abatement Measures).

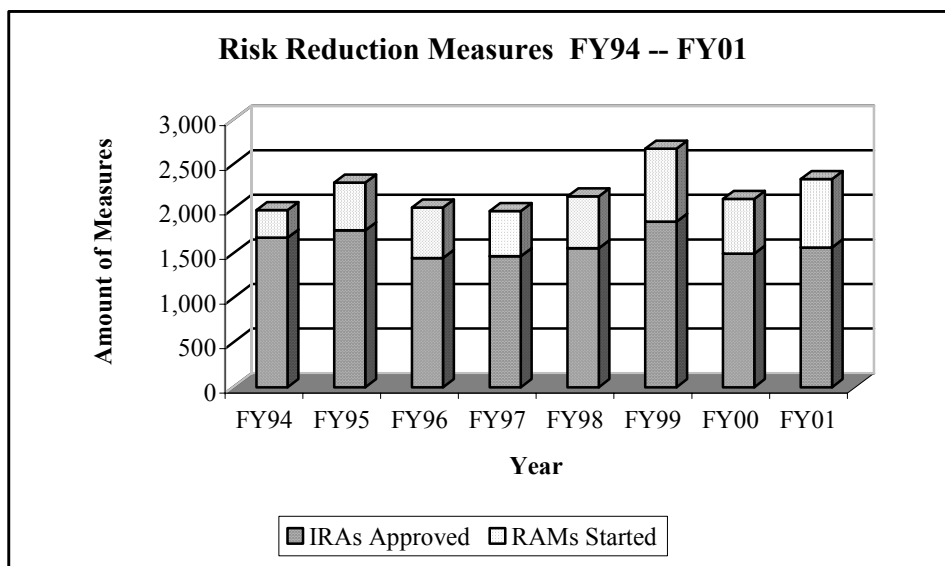


Figure 34

How many sites have been cleaned up?

More than 14,000 assessments and/or cleanups (of sites and spills) have received LSP “sign off” indicating the achievement of no significant risk or no substantial hazard (i.e., a Response Action Outcome or “RAO” was filed) to get out of the MCP system.

- Approximately 97% of RAOs filed show that releases have been cleaned up to a permanent solution with 88% of RAOs cleaned up to levels that are suitable for unrestricted use and 9% of RAOs filed an activity and use limitation (AUL).
- Approximately 3% of RAOs filed show that releases have been cleaned up to a temporary solution.

**How many
Response Action
Outcomes have
been submitted?**

The numbers of Response Action Outcomes submitted represent a significant increase in the pace of cleanups and site closures compared to the old program. More than fourteen times as many sites were closed out in the first four years of the new program (FY94 – FY97) than in the last four years of the old program (approximately 3,146 sites compared to 225).

A total of 14,496 Response Action Outcomes have been submitted. Approximately 2,500 of these RAOs are for sites that had languished for years under the old rules.

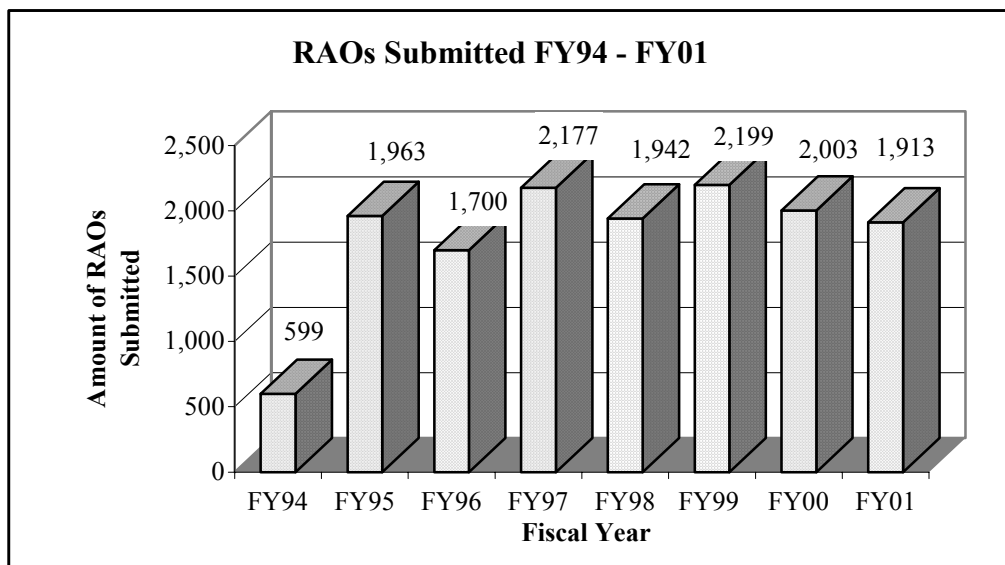


Figure 35

What is the rate of cleanup?

The more seriously contaminated sites experienced an even bigger increase in the rate of cleanup: in the last four years of the old program, only 3 priority sites completed cleanup, while in the first four years of the new program, 68 former priority sites completed cleanup (these former priority sites all started off in the new program as Tier IA sites, but most were subsequently downgraded by DEP because they no longer needed direct oversight).

The increased pace of cleanup has substantially reduced the backlog of sites. When the new program took effect in 1993, there were more than 6,800 sites that required further action (referred to in the new program as “transition sites”). Of these, 3,616 have subsequently been closed out compared to only 564 sites that were closed out in the old program. For the first time, DEP has experienced a downward trend in the size of the total universe of sites.

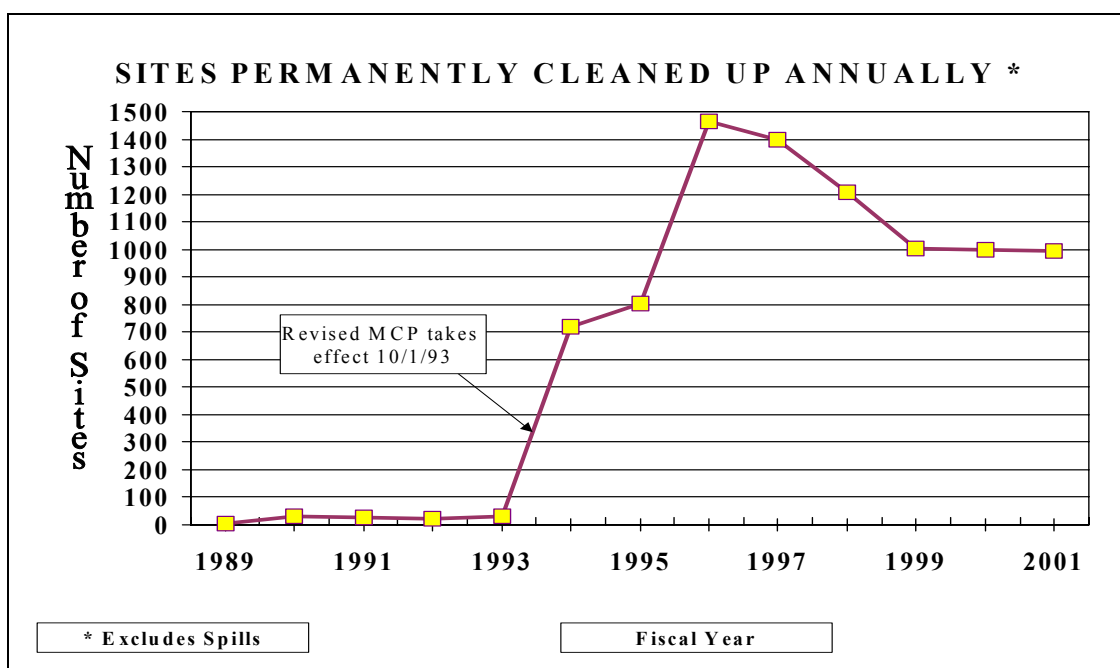


Figure 36

What is the current status of sites?

For new releases reported more than one year ago (i.e., reported in fiscal years 1994 – 2000), 70% have achieved an RAO reflecting the efficient cleanup of releases.

The remaining releases were Tier Classified, and have five years to achieve a permanent solution.

- Sites classified as Tier IA pose the greatest risk, are the most complex and required direct DEP oversight.
 - Sites classified as Tier IB, Tier IC and Tier II pose less risk, are less complex and do not require direct DEP oversight.
-

What is the status of open sites?

The universe of sites in need of further action totals 6,428, and includes:

- 1,324 “pre-classified” sites that have not yet reached the one-year deadline for Tier Classification (and must either clean up or Tier Classify by this deadline).
 - 3,601 Tier Classified sites¹¹ that have five years from the date of Tier Classification to complete a cleanup or implement a long-term remedy.
 - 1,503 “default Tier IB” sites that have missed the deadline for Tier Classification and are in noncompliance. These default sites are subject to DEP enforcement.
-

¹¹ 75 of the 266 Tier IA sites are included on the federal Superfund National Priorities List (NPL); The U.S. Environmental Protection Agency (EPA) lists the number of NPL sites in Massachusetts as 31. DEP’s number is higher because the Massachusetts Military Reservation site is listed as 47 Tier IA sites in DEP’s list.

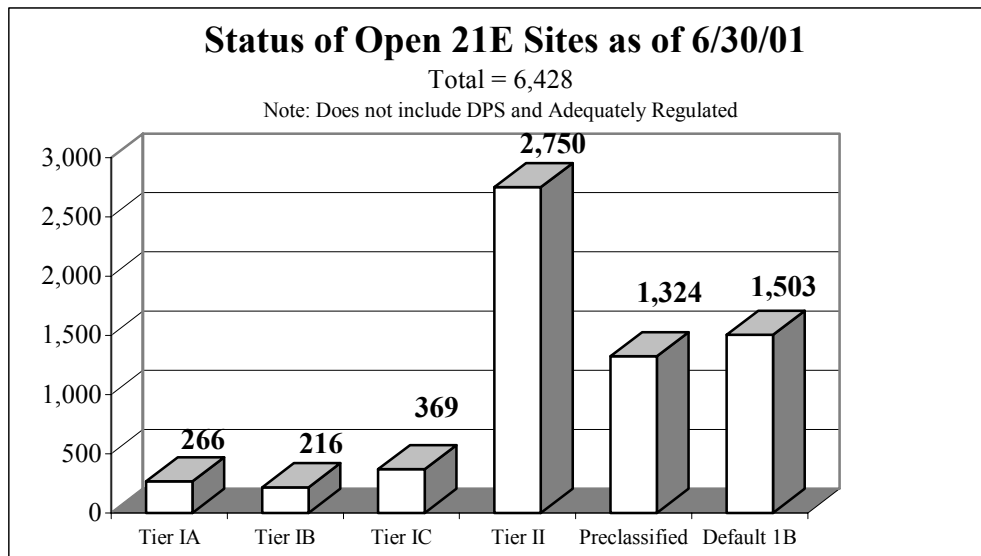


Figure 37

What are the successes of DEP's redesigned Waste Site Cleanup Program?

The following are the conclusions of the *Final Generic Environmental Impact Report*, a broad evaluation of the redesigned program, published in February 1999:

- The privatized program, which relies on the expertise and resources of the private sector, has successfully allowed people who want to proceed with cleanup to do so, with minimum involvement by DEP. Essentially, the redesigned program has clearly accomplished one of its primary goals, which was to remove government-related obstacles for people who want to proceed with assessments and cleanups.
 - The program's reporting thresholds and incentives for early action (including reducing risks) have ensured that many small contamination problems are dealt with completely and quickly once they are reported to DEP. Very small problems that are not likely to pose significant risk for health, safety, public welfare or the environment (and therefore do not need state attention) are not entering the program.
 - These changes have allowed DEP to focus its resources on the areas that require government attention: developing standards for making assessment and cleanup decisions, oversight of oil and hazardous materials emergencies and sites presenting high levels of risk for public health and the environment, and auditing private sector work to make sure that it complies with DEP's requirements.
-

**Where will DEP
focus its efforts?**

DEP will focus its efforts in the following program areas:

- To improve the quality of private sector work, DEP plans to better define performance standards in the Massachusetts Contingency Plan (MCP); continue strong enforcement (by DEP and the LSP Board); continue implementing improvements to the audit program; and continue training and education efforts.
 - DEP enforcement will continue to dedicate significant resources to address the issue of non-responders, those sites where parties responsible for remediating releases of oil or hazardous materials have failed to make required submittals to DEP documenting the progress of response actions performed.
 - DEP will continue to improve the integration of the federal Superfund program to provide additional incentives to parties to voluntarily conduct remedial activities in compliance with the MCP.
 - DEP will continue to update its standards, regulations, and policies governing decision-making about how to investigate and clean up sites, making sure that they are based on the latest scientific and technical advances.
 - DEP will also continue to develop proposals to implement improvements to surgically strengthen key MCP performance standards and streamline/clarify existing rules, including changes to our regulations and some of our operating procedures.
 - To improve its ability to evaluate and communicate the activities and success of the Waste Site Cleanup program, to both internal and external audiences, DEP will focus on developing indicators of program performance and measures of success.
-

4. Activities in 2002-2003

How will DEP facilitate the cleanup of Brownfields sites?

The Commonwealth of Massachusetts is a nationally recognized leader in addressing the many challenges that hinder brownfields cleanup and redevelopment. Innovative programs developed by the state over the past decade have significantly increased the number of contaminated sites being cleaned up and successfully redeveloped.

DEP has contributed in two important ways to brownfields revitalization efforts in the Commonwealth of Massachusetts. First, site assessment and cleanup regulations have been privatized to eliminate the need for DEP involvement in most transactions. The privatization of the Massachusetts Waste Site Cleanup Program in 1993 enabled more cleanups to be undertaken without direct DEP oversight. In its first four years, the program saw a fourteen-fold increase in the number of sites permanently remediated.

Second, DEP has taken a proactive role in providing technical assistance to project proponents to facilitate the cleanup and redevelopment of brownfield sites. Incentives established through the 1998 Brownfields Act have increased the number of sites cleaned up by helping interested parties address unknown risks that might hinder brownfields transactions, and by providing financial resources and liability protection. DEP has successfully “teamed” with other state brownfields partners to identify and address obstacles to cleanup and redevelopment, promoting environmental protection and economic development goals.

Because environmental assessment and cleanup are the critical first steps in the brownfields redevelopment process, DEP must continue to be proactive in identifying potential brownfield sites and helping them move through the system to a regulatory endpoint. DEP has streamlined agency response to brownfields inquiries and issues by increasing staff dedicated to brownfields and providing single points-of-contact in both Boston and our regional offices across the Commonwealth. The agency must continue to provide technical project assistance to businesses, developers, lenders, and community groups in all phases of brownfields projects.

Some highlights of DEP’s brownfield efforts:

- Over the past three years, DEP has provided targeted project assistance to more than 208 projects in over 80 communities across the state.
- DEP is performing site assessment activities at three brownfields sites totaling \$190,000 through a grant from the EPA Brownfields Site Assessment Program.
- DEP is also assisting communities by providing on-scene coordinator functions required by EPA through the EPA Revolving Loan Fund Program, enabling future assessment and cleanup at 24 sites in 7 communities.

DEP has come a long way toward increasing awareness of brownfields issues and incentives through strong interagency partnerships with state brownfields partners at MassDevelopment, MassBusiness, the Department of Revenue and the Attorney General’s Office.

How will DEP facilitate the cleanup of Brownfields sites?
(continued)

DEP has also worked towards developing new ways to increase flexibility in our own regulations and procedures to help address ever evolving brownfields challenges, including:

- Developing a special project designation that provides increased flexibility on cleanup deadlines for certain types of projects; and
- Working cooperatively with parties interested in revitalizing DEP priority lien sites and with the communities in which they are located to recover past cleanup costs while ensuring cleanup and local land-use goals are met.
- Developing proposals to streamline approvals and assessment procedures for construction related activities under the MCP.

Early DEP involvement and issue identification have helped promote environmental protection goals early in the process, and DEP should continue to play a strong and continued role to facilitate brownfields projects over the next decade. A continued focus will be placed on educating businesses, developers, lenders, and community groups about Chapter 21E.

How does DEP work in partnership with EPA to clean up sites?

EPA provides resources to DEP for a number of cleanup activities. Through the federal Superfund Program, EPA supports state oversight of cleanup work at federal Superfund sites within Massachusetts (i.e. sites listed on the National Priorities List). These funds pay for state oversight and also help defray state management expenses. As a result of a long-standing cooperative process, both EPA and DEP prioritize Superfund activities to be undertaken each fiscal year and share in subsequent management responsibilities.

DEP will continue working with EPA to integrate state and federal assessment and cleanup programs to achieve maximum flexibility and state priority setting. We will focus federally supported resources on supporting the privatized cleanup program through two EPA grants:

- Multi-Site Cooperative Agreement (MSCA) grant will continue to provide resources for reviewing and auditing sites on CERCLIS to ensure that response actions meet state standards and to assist EPA in making decisions to de-list sites from CERCLIS.
- Voluntary Cleanup Program (VCP) grant will provide resources for developing and implementing program improvements identified in the evaluation of the 21E Program.

DEP also receives EPA funding to help defray those portions of the 21E Program related to the assessment and removal of leaking underground storage tanks. In addition, EPA and DEP are using other mechanisms to encourage private response actions, including developing a “Commissioner/Regional Administrator Watch List,” evaluating out-of-compliance sites for listing on CERCLIS, and referring sites for inclusion on the NPL.

B. Clean Up Waste Sites Baseline Conditions

The following list describes baseline environmental conditions as of June 30, 2001:

- # of sites on the Federal Superfund's National Priorities List (NPL):31
 - # of sites on the NPL which have been delisted: 2
 - Number of oil and hazardous material sites: 6,428
 - # of oil and hazardous material sites where groundwater has been affected: 2,207
 - # of oil and hazardous material sites where surface water has been affected: 435
 - # of oil and hazardous material sites where soil has been affected:3,428
 - Tier IA sites 266
 - Tier IB sites 216
 - Tier IC sites 340
 - Tier II sites 2,750
 - Default Tier IB sites¹² 1,503
 - Preclassified sites¹³ 1,324
 - In FY2001, risks were reduced at 2,276 sites (Immediate Response Actions, Voluntary Response Action Measures, and Utility Response Action Measures)
 - # of oil and hazardous materials sites permanently cleaned up in FY2001: 1,913
-

C. Clean Up Waste Sites Milestones

Clean Up Waste Sites will achieve the following milestones in SFY 2002 –2003.

- The backlog of sites in the Waste Site Cleanup Program where private parties have failed to meet deadlines will be reduced by 25% each year.
 - Meet the legislative mandate to audit a sufficient number of response actions not overseen or conducted by DEP in order to ensure that these response actions are performed in compliance with the provisions of Chapter 21E as well as the Massachusetts Contingency Plan. In each year DEP will, at a minimum, audit 20% of all sites for which annual compliance assurance fees are required to be paid. DEP estimates between 800 and 1,000 sites will be audited each year in SFY02-03.
 - Meet the legislative mandate to complete a targeted audit on all sites at which an Activity and Use Limitation (AUL) has been implemented in order to ensure that response actions not overseen or conducted by DEP are performed in compliance with the provisions of Chapter 21E and the Massachusetts Contingency Plan. DEP estimates between 150 and 200 sites with AULs will be audited each year in SFY02-03.
-

¹² Sites where potentially responsible parties have failed to meet a significant deadline for assessment or cleanup.

¹³ Includes sites which may require longer-term response actions as well as spills which will likely be cleaned up in a short period of time.

Clean Up Waste Sites Goal #1: Maximize risk reduction

What needs to be done

The Waste Site Cleanup program components to achieve this goal are:

Notification, including

- Releases Reported: Time-critical 2 hour and 72 hour; and 120 Day Notifications
- Site Discovery, and
- Downgradient Property Status.

Emergency Response and Risk Reduction

The MCP encourages, and in some situations requires, that **early risk reduction measures** be performed.

- **Immediate Response Actions** are *required* when certain time-critical conditions are present, such as a sudden spill or an imminent hazard, and
 - **Release Abatement Measures** are optional and may be performed only if the contamination is not time-critical. Releases Abatement Measures may be performed at any time during the cleanup.
-

Management Strategies

This is how DEP will maximize risk reduction opportunities:

- Respond to 2,000 spills and other time critical releases annually
 - Ensure that Immediate Response Actions (IRAs) and Release Abatement Measures (RAMs) are properly implemented by screening plans and providing written approvals where warranted
 - Provide technical assistance and guidance to parties proposing Immediate Response Actions (IRAs)
 - Provide oral approvals, review and approve follow-up written IRA Plans, and Completion Statements
 - Oversee response actions in the field and mobilize state contractors where responsible parties cannot or will not respond
 - Track progress to ensure implementation of IRAs
 - Screen and process 120-day release notifications
 - Track progress of Utility-Related Abatement Measures (URAMs)
 - Provide technical assistance for BWSC site assessment and remediation activities
 - Strengthen stakeholder partnerships, and
 - Continue to utilize EPA's Removal Program resources.
-

**P-A-C-E-R
Activities**

We will carry out our management strategies through these activities.

Permitting:

- Issue Tier 1 Permits.

Assistance:

- Provide targeted outreach to municipal fire departments; emergency responders; commercial tank yard operators and residential homeowners.

Compliance:

- Proactively seek risk reduction opportunities, and request IRAs and federal removal actions to address identified hazards
- Conduct site discovery activities focusing on water supplies in Holyoke, Orange, Agawam, Granby (private wells), Charlemont (public water supplies), Hudson, Millbury, Holden, Gardner, Charlton, Wachusett Watershed, Woburn, Wilmington, Peabody, Tewksbury, Chelmsford North Plymouth, Marshfield, Stoughton
- Conduct other inspections to: follow-up on compliance issues identified in previous inspections; investigate complaints; investigate patterns of noncompliance; implement other initiatives
- Respond to release notifications; review and approve IRAs and track their progress; mobilize state contractors where necessary
- Oversee response actions at Tier IA, NPL, publicly funded and federal facility sites, and
- Conduct assessments to assist communities.

Enforcement:

- Pursue enforcement actions at Default Tier 1B, Tier IA, NPL, publicly funded and federal facility sites, and
- Recover public funds spent on cleanup actions.

Regulation development (includes program/policy development and legislation):

- Continue to develop and streamline operations, improve efficiency and effectiveness and consistency of risk reduction/emergency response activities, develop policies and technical guidance for response actions and encourage private parties to act.
-

Clean Up Waste Sites Goal #2: Facilitate the cleanup of brownfields sites.

What needs to be done

- **Increase awareness of brownfields site issues through strong interagency partnerships**
 - **Provide clear rules, guidance, and education to assist private parties conducting response actions, and**
 - **Implement program improvements and operational changes.**
-

Management Strategies

This is how DEP will facilitate the cleanup of brownfields sites.

- Provide technical assistance to businesses, developers, lenders and community groups involved in brownfields projects
 - Streamline agency involvement and track success
 - Partner with other agencies, and
 - Actively promote the redevelopment of priority lien sites.
-

P-A-C-E-R Activities

We will carry out our management strategies through these activities.

Permitting:

- Issue Special Project permits.

Assistance:

- Provide technical assistance to parties cleaning up and redeveloping contaminated sites
- Provide a brownfields site manager to assist municipalities at sites proceeding under the Brownfields Revolving Loan Fund Pilot Program, and
- Provide a single point of contact at DEP regions for comprehensive assistance.
- Produce informational material (update/enhance website, update/enhance written material, generate mailing)
- Coordinate meetings with regions and other agencies for project-specific inquiries
- Speak at workshops and conferences to educate stakeholders on 21E, MCP, Brownfields Act, and
- Target communities for proactive outreach.

Compliance:

- Conduct inspections and audits of brownfields sites (in accordance with the rules and practices of DEP's audit program).

Regulation development (includes policy/program development and legislation):

- Work with Attorney General's Office to develop brownfields Covenant Not To Sue Program, and
 - Work with the following: Massachusetts Departments of Economic Development and Revenue, the Massachusetts Development Finance Agency, and the Massachusetts Business Development Corporation to assist them in developing the 1998 Brownfields Act financial assistance tools.
-

Clean Up Waste Sites Goal #3: Increase the rate of cleanup actions

What needs to be done

- **Integrate state and federal cleanup programs to maximize flexibility and accommodate state program priorities**
 - **Provide clear rules, guidance, and education to assist private parties conducting response actions, and**
 - **Implement program improvements and operational changes.**
-

Management Strategies

This is how DEP will increase the rate of cleanup actions:

- Emphasize private sector responsibility through a strong compliance and enforcement program
 - Surgically strengthen key MCP performance standards and streamline existing rules
 - Provide technical assistance and education, and
 - Use CERCLIS site listing and deletion to provide incentives to implement response actions under 21E.
-

P-A-C-E-R Activities

We will carry out our management strategies through these activities.

Permitting:

- Issue Special Project and Tier 1 Permits.

Assistance:

- Provide technical assistance (includes MCP Help Line, Regional Audit Forums, Superfund Advisory Committee Technical Forums, Licensed Site Professional Training)
- Award Technical Assistance Grants
- Promote innovative technologies, and
- Develop and distribute technical guidance.

Compliance:

- Review and approve voluntary risk reduction actions [Release Abatement Measures (RAMs)]
- Conduct targeted and random audits (including audits of sites with activity and use limitations (AULs) required by the 1998 Brownfields Act)
- Conduct other inspections in order to: follow-up on compliance issues identified in previous inspections; investigate complaints; investigate patterns of noncompliance; and implement operational improvements to audit program
- Implement compliance strategy to reduce the backlog of non-responders (i.e., default Tier IB sites), and
- Bill and collect annual compliance fees.

Enforcement:

- Enforce Massachusetts Contingency Plan standards with a special focus on parties who have failed to take response actions/meet deadlines, and
- Refer LSPs to LSP Board for investigation to promote LSP compliance with professional standards.

Regulation development (includes program/policy development and legislation):

- Continue to surgically strengthen key MCP performance standards and streamline/clarify existing rules, and
 - Develop policies, and technical guidance.
-

Clean Up Waste Sites Goal #4: Ensure the quality of cleanup actions

What needs to be done

- Use compliance and enforcement to encourage private parties to take response actions and to ensure the quality of private response actions
 - Integrate state and federal cleanup programs to maximize flexibility and accommodate state program priorities
 - Provide clear rules, guidance, and education to assist private parties conducting response actions, and
 - Implement program improvements and operational changes.
-

Management Strategies

This is how DEP will increase the rate and quality of privatized cleanup actions:

- Emphasize private sector responsibility through a strong compliance and enforcement program
 - Surgically strengthen key MCP performance standards and streamline existing rules
 - Provide technical assistance and education, and
 - Use CERCLIS site listing and deletion to provide incentives to implement response actions under 21E.
-

P-A-C-E-R Activities

We will carry out our management strategies through these activities.

Permitting:

- Issue Special Project and Tier 1 Permits.

Assistance:

- Provide technical assistance (includes MCP Help Line, Regional Audit Forums, Superfund Advisory Committee Technical Forums, Licensed Site Professional Training)
- Award Technical Assistance Grants
- Promote innovative technologies, and
- Develop and distribute technical guidance.

Compliance:

- Review and approve voluntary risk reduction actions [Release Abatement Measures (RAMs)]
- Conduct targeted and random audits (including audits of sites with activity and use limitations (AULs) required by the 1998 Brownfields Act)
- Conduct other inspections in order to: follow-up on compliance issues identified in previous inspections; investigate complaints; investigate patterns of noncompliance; and implement operational improvements to audit program
- Implement compliance strategy to reduce the backlog of non-responders (i.e., default Tier IB sites), and
- Bill and collect annual compliance fees.

Enforcement:

- Enforce Massachusetts Contingency Plan standards with a special focus on parties who have failed to take response actions/meet deadlines, and
- Refer LSPs to LSP Board for investigation to promote LSP compliance with professional standards.

Regulation development (includes program/policy development and legislation):

- Continue to surgically strengthen key MCP performance standards and streamline/clarify existing rules, and
 - Develop policies, and technical guidance.
-

Clean Up Waste Sites Goal #5: Ensure the sound closure of unlined landfills
Self Assessment
Solid Waste Landfills

Why is it important to properly close unlined solid waste landfills?

Proper closure of unlined solid waste landfills greatly reduces the generation of leachate which in turn contaminates groundwater.

Leachate is created when precipitation falling on a landfill surface percolates through the waste and carries decomposed and semi-decomposed waste downward toward the base of the landfill.

Leachate at unlined landfills migrates below the waste and outside the landfill footprint toward groundwater, surface waters, and other resources which are then contaminated by the addition of the leachate constituents.

Proper closure of unlined landfills involves:

- capping the top of the landfill with a properly engineered cover to prevent precipitation from contacting the waste and therefore significantly reducing leachate
- corrective action to eliminate further migration of existing leachate, and
- continued water monitoring at and near the closed landfill to warn about potential adverse impacts to people and ecological resources near the landfill.

Proper closure of a landfill also significantly reduces the diffusion of dangerous landfill gases into the atmosphere. At some landfills, this has involved collection of gases in pipes below the cap and directing the gases to be burned in flares or used as an energy source.

What are DEP's plans to close unlined solid waste landfills in Massachusetts?

DEP has closed all but two unlined solid waste landfills in Massachusetts. At these two sites there are plans to discontinue waste disposal at the unlined areas and to start disposal in lined cells nearby. DEP also is developing a longer term strategy to assess and take appropriate action at the inactive unlined landfills.

How many unlined solid waste landfills have been closed over time?

Since 1994, when the Hynes Amendment directed DEP to categorize active landfills, DEP has negotiated Administrative Consent Orders with landfill operators/owners and successfully closed about 120 unlined landfills.

What challenges does DEP face in closing the remaining unlined solid waste landfills?

The main challenge is finding nearby adequate alternative waste disposal means for communities that have relied on unlined landfills for many years. DEP is not permitting construction of new unlined landfills. In some cases waste is hauled over long distance to permitted lined landfills, combustion facilities, recycling facilities and composting facilities. This challenge is addressed in the *Beyond 2000 Solid Waste Master Plan*.

Clean Up Waste Sites Goal #5: Ensure the sound closure of unlined landfills

**What needs
to be done:**

Implement closure plans at unlined landfills.

**Management
Strategies**

- Assess landfills prior to closure and address contamination in closure plans, and
 - Monitor progress of the closure of landfills in accordance with terms and conditions of signed consent orders.
-

**P-A-C-E-R
Activities**

We will carry out our management strategies through these activities.

Permitting:

- Issue permits for proper unlined landfill closures.

Compliance:

- Review monitoring data for unlined landfills and initiate assessments, and
- Conduct other inspections to follow-up on compliance issue including the investigation of complaints and investigations of patterns of noncompliance.

Enforcement:

- Take enforcement actions as necessary.
-

Clean Up Waste Sites Goal #6: Ensure the sound closure and cleanup of contaminated sites at licensed and interim-status hazardous waste treatment, storage, and disposal facilities

What is the difference between this program and the Waste Site Cleanup Program?

The majority of assessments and cleanups of hazardous waste facilities are being overseen by DEP under the Massachusetts Hazardous Waste Regulations, or by EPA under the RCRA Corrective Action Program (MCP) rather than under the Waste Site Cleanup Program's Massachusetts Contingency Plan. These cleanups must still meet the substantive performance standards in the MCP.

What is the status of cleanups of these facilities?

Cleanups (or "corrective actions") have been ongoing at these facilities since the mid-1980s. At present, 23 facilities subject to RCRA Corrective Action are conducting cleanups. Nine of these are commercial hazardous waste treatment, storage and disposal facilities (TSDFs). Three additional commercial TSDFs have completed cleanups and another one is operating a pump and treat system as a final remedy. Stabilization measures to mitigate potential indoor air impacts are being implemented at two facilities under state oversight. Imminent hazard evaluations are continuing at two facilities.

How does DEP work in partnership with EPA to clean up these facilities?

DEP and EPA continue an informal, but long established, practice of sharing the work at these facilities in order to minimize duplication and to maximize the use of both agencies' limited resources. The Massachusetts Contingency Plan allows facilities to conduct assessment and cleanup activities under EPA RCRA oversight without the need for DEP oversight, while assuring that the cleanup is consistent with and as protective as any other under the MCP. Under this practice, EPA is overseeing the cleanup at three facilities, and two other facilities are implementing voluntary assessments under agreements with EPA. Eventually, these two facilities will implement remedies under EPA permits or orders subject to the MCP. DEP and EPA periodically meet to discuss the status of activities at those facilities under EPA oversight and those implementing cleanups under the state Hazardous Waste and Waste Site Cleanup programs. In addition, DEP and EPA consult and assist each other with issues that relate to the implementation of RCRA and the MCP at other sites conducting cleanups under the MCP.

What does DEP do to prevent future problems at hazardous waste facilities regulated under RCRA?

Beginning in 1990, DEP began to include corrective action/cleanup provisions in the hazardous waste licenses for any commercial hazardous waste facility that was not conducting cleanup under EPA's RCRA Corrective Action program. Numerous response actions have been performed, including but not limited to tank and soil removals, access restriction measures, indoor air venting system installation, and remedial system installations (pump and treat, sparge systems). In addition, due to these corrective actions, releases from abutting non-hazardous waste facilities have been discovered, including some with imminent hazards. These abutting non-RCRA sites are being addressed through the MCP. Groundwater monitoring is required at licensed commercial facilities that have completed cleanup to assure conditions are maintained.

**What are
challenges for
2002-2003?**

DEP will perform RCRA Corrective Action supplemental grant work as described in a letter from Jim Colman to Matt Hoagland dated February 27, 2001 and approved in a letter from Matt Hoagland to Jim Colman dated May 31, 2001. Here are the significant milestones outlined in the February 27 letter:

- Assist EPA in evaluating Environmental Indicators (EI's) at the remaining sites on the GPRA list not yet completed
 - Develop a list of those sites which can meet EI's in FFY 2002
 - Conduct an initial review of RCRA Corrective Action Authorization and meet with EPA to discuss the regulatory framework for possible authorization, and
 - Meet with EPA to discuss this conceptual framework and set milestones for implementing the proposal in FFY 2002.
-

Clean Up Waste Sites Goal #6: Ensure the sound closure and cleanup of contaminated sites at licensed and interim-status hazardous waste treatment, storage, and disposal facilities

What needs to be done

Assure the clean closure and cleanup of licensed and interim-status hazardous waste facilities.

Management Strategies

Place appropriate conditions (monitoring, assessment and remediation) in hazardous waste facility licenses, and
Monitor, assess and remediate, as necessary, at these facilities.

P-A-C-E-R Activities

We will carry out our management strategies through these activities.

Permitting:

- Incorporating corrective action provisions in hazardous waste facility licenses, closure and post-closure plans as necessary, and
- Continue review of reports, plans, and schedules for facilities conducting cleanups under the state's Hazardous Waste Regulations.

Compliance:

- Monitor cleanup activities at hazardous waste facilities including sampling inspections and the review of plans, and groundwater monitoring and assessment reports
- Continue to work with EPA to collect, submit, and update data on the status of state lead sites subject to RCRA Corrective Action, and
- Continue to assist EPA in conducting the environmental indicator review at state lead sites subject to RCRA Corrective Action.

Enforcement:

- Conduct appropriate enforcement at hazardous waste facilities to assure compliance with corrective action provisions of licenses and approved plans. In addition, follow-up enforcement resulting from inspections as needed.

Regulation development (includes program/policy development and legislation):

- Continue discussions with EPA to regarding obtaining authorization under RCRA for RCRA Corrective Action and the Hazardous Waste Identification Rule regarding Contaminated Media.
-

gTable 13: Environmental Indicators and other Performance Measures associated with the Environmental Goal of “Clean Up Waste Sites.”¹⁴

Environmental Indicators
<i>Environmental Indicator: National Priority List (NPL) sites (area) cleaned up</i>
Program Outcomes
<i>Program Outcome/Output: # of LUST cleanups initiated</i>
<i>Program Outcome/Output: # of LUST cleanups completed</i>
Program Outputs
Program Output: # of Tier I permits issued
Program Output: # of IRAs approved
Program Output: # of IRAs completed
Program Output: # of enforcement actions
Program Output: # of Special Project Permits issued
Program Output: # of Technical Assistance Grants awarded
Program Output: # of approved voluntary risk reduction actions (RAMs)
Program Output: # of targeted and random audits
Program Output: # of compliance inspections
Program Output: # of compliance assistance “reminder” letters
Program Output: # of Licensed Site Professionals awarded continuing education certification by attending regulatory training conducted by DEP
Program Output: # of Response Action Outcomes submitted

DEP is currently developing indicators of program performance and measures of success for the Waste Site Cleanup Program, which include Operational Goals 1 through 4 under Clean Up Waste Sites. These activities will continue during the next year and will be incorporated into DEP’s annual operating plan.

Performance Measures for Clean Up Waste Sites Operational Goals 5 and 6 include:

Environmental Indicators
<i>Environmental Indicator: Groundwater releases controlled (RCRA related)</i>
Program Outcomes
<i>Program Outcome: Human exposures controlled (RCRA related)</i>
<i>Program Outcome: Resource Conservation and Recovery Act (RCRA) Corrective Action Sites (area) cleaned up</i>
<i>Program Outcome: % of hazardous waste managed at Treatment, Storage, and Disposal Facilities (TSDFs) with approved controls in place</i>
Program Outcome: # of unlined landfills properly closed with impermeable caps
Program Outcome: # of landfill sites authorized for reuse for open space and/or recreation
Program Outcome: # of hazardous waste facilities where corrective actions have been implemented
Program Outcome: # of hazardous waste facilities where imminent hazards have been evaluated or are being controlled
Program Outputs
Program Output: # of consent orders for landfill closure and capping
<i>Program Output: # of high priority RCRA facilities with human exposure controlled</i>
<i>Program Output: # of high priority RCRA facilities with groundwater releases controlled</i>

¹⁴ Items that are italicized are also Core Performance Measures.